

## HOW I DO IT

# Strip Biopsy for Gastrointestinal Carcinoid Tumor

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### INTRODUCTION

Endoscopic mucosal resection, an alternative to endoscopic polypectomy, has been recently described [1,2]. Carcinoid tumors, which arise from Kulchitsky's argentaffin cells, commonly penetrate through the muscularis mucosae to form the predominant part of the tumor in the submucosa. The lesions, therefore, tend to be sessile with

a wide base, circumstances that are not amenable to routine polypectomy. The possibility of lymph node metas-

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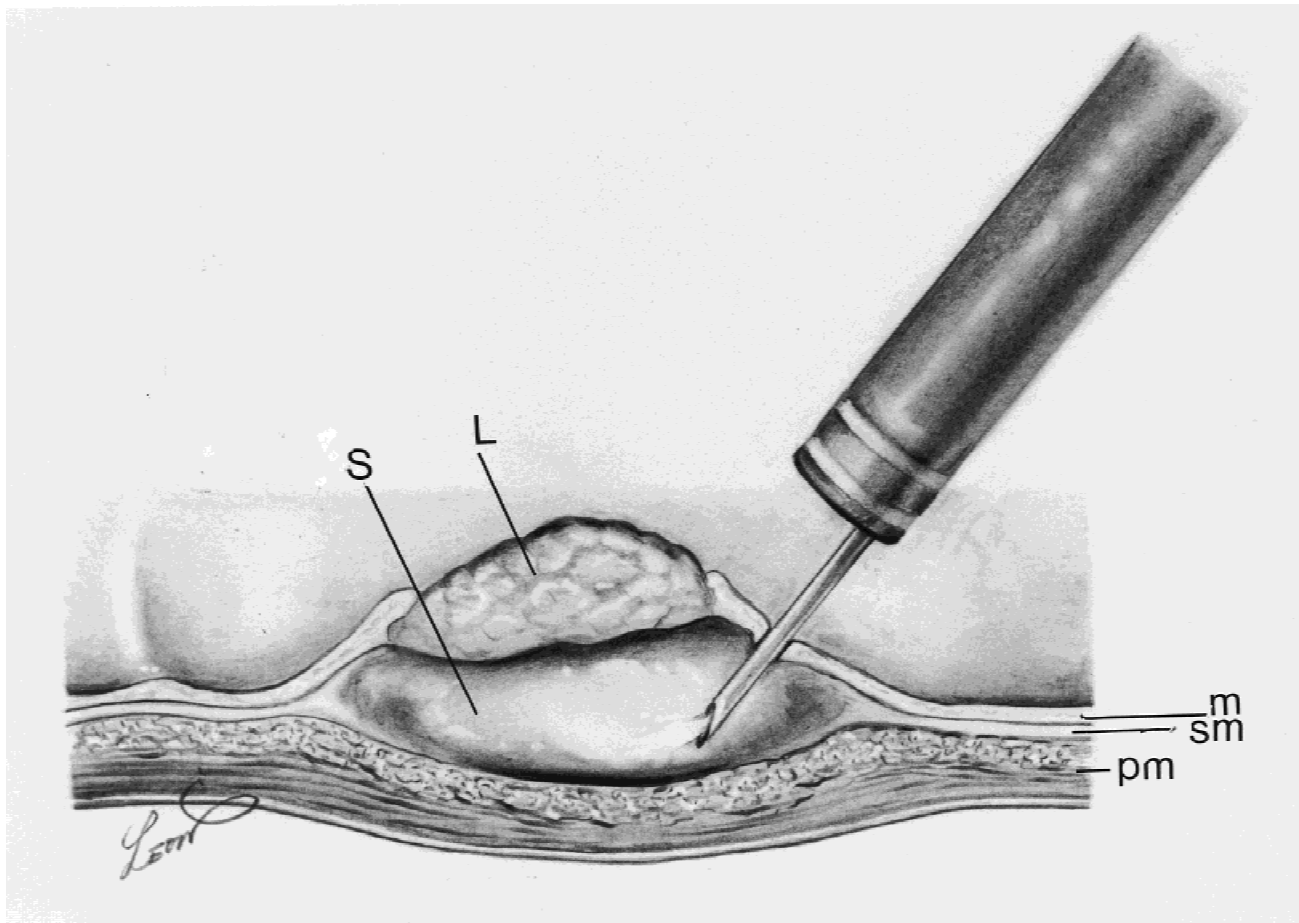


Fig. 1. Physiological saline containing indigocarmine is injected into the submucosal layer to lift the mucosal layer. L, target lesion; S, physiological saline; m, mucosal layer; sm, submucosal layer; pm, proper muscular layer.

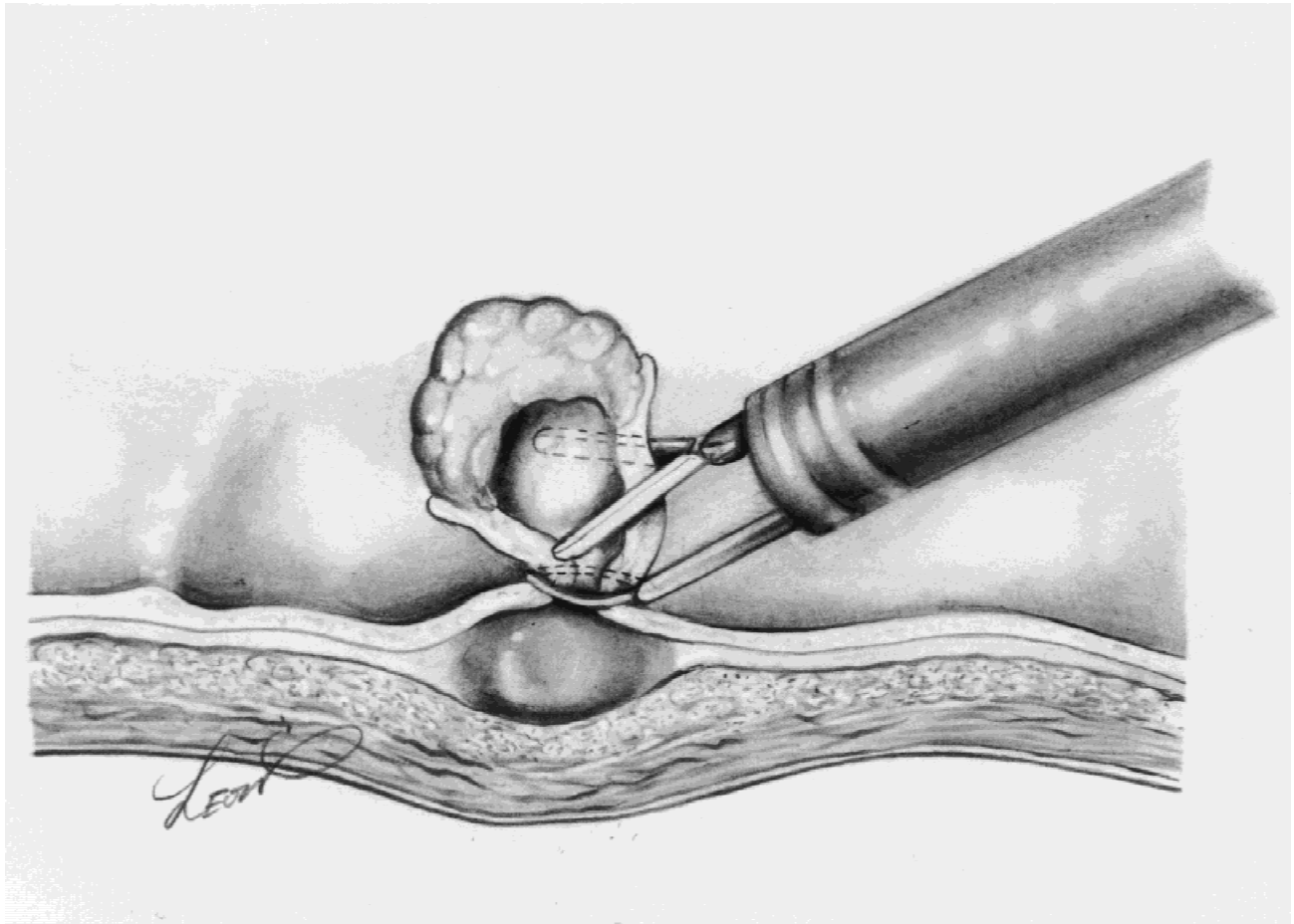


Fig. 2. The surrounding normal mucosa is grasped with the grasping forceps and while pulling on it, the tumor, including surrounding normal mucosa, is resected with a snare.

tases from tumors that are smaller than 10 mm and invasion only into the submucosa is remote. A localized mucosal resection may be preferable in such cases. As an alternative to polypectomy, we have developed "strip" biopsy, a method for endoscopic mucosal resection. With this technique, the lesion is made to protrude by an endoscopically directed injection of saline into the submucosa and resected with high frequency waves that include surrounding normal mucosa. The protrusion of the lesion above the mucosa and submucosa insures that the deeper margins of the tumor are included in the specimen. If surrounding normal mucosa is also included, all margins of the specimen should be free of neoplasm.

#### PROCEDURE

A two-channel endoscope (GIF-2T200, Olympus Co., Tokyo, Japan) is used, and an endoscopic needle (NM23L, Olympus) is introduced into the first channel. Tissue in the vicinity of the tumor is punctured, and 4 ml

of physiological saline containing 2% indigocarmine are injected into the submucosal layer (Fig. 1). Next, a snare (SD-7P, Olympus) is introduced into the second channel and grasping forceps (FG24L, Olympus) into the first channel. The mucosa around the lesion is grasped and pulled up. The lesion, including an ample portion of surrounding normal mucosa, is then snared (Fig. 2). The snaring is performed with a 3.5 point coagulation wave using high frequency waves (UES-10, PSD electrosurgical unit, Olympus). The specimen is retrieved with grasping forceps.

#### REFERENCES

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2. Inoue H, Endo M, Takeshita K, et al.: A new simplified technique of endoscopic esophageal mucosal resection using a cap-fitted pan-endoscope (EMRC). *Surg Endosc* 1992;6:264-265.